

PhD program in Statistics

**DSS Statistics Seminar**

**December 1, 2023, 12:00**

**Webinar** <https://uniroma1.zoom.us/j/86881977368?pwd=SWRFcVFjMDZTa0lXZk05TE1zNm5adz09>

**Passcode: 432940**

Ten years of  
mobile phone big data  
statistical analyses

## ***Maurizio Carpita***

*Department of Economics and Management,  
University of Brescia.*

In the era of big data, monitoring and forecasting people crowding and mobility is a relevant aspect for urban policies, and smart cities use signals from mobile phone networks to support the optimization of urban systems and flows. Mobile phone data can be used for various purposes, as they come in different types: in this talk, applications are presented for social and cultural events monitoring, mobility flows and flooding risk analysis. Special attention is devoted to the statistical methods useful for these analyses, based on spatio-temporal data: briefly discussed are results obtained using the Histogram of Oriented Gradients approach for image reduction, the Functional Data Clustering of time series and the VARX model with Harmonic Dynamic Regression.



**SAPIENZA**  
UNIVERSITÀ DI ROMA